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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,860	07/24/2003	Jurgen Eich	03191/000M965-US0	6133
7278	7590	08/11/2005	EXAMINER	
DARBY & DARBY P.C. P. O. BOX 5257 NEW YORK, NY 10150-5257			BEHNCKE, CHRISTINE M	
			ART UNIT	PAPER NUMBER

3661

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/629,860

Applicant(s)

EICH ET AL.

Examiner

Christine M. Behncke

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-26 and 28-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11 is/are allowed.
- 6) ☒ Claim(s) 12, 13, 19, 21-24, 28 and 35 is/are rejected.
- 7) ☒ Claim(s) 14, 15, 20, 25, 26, 29-34 and 36-42 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2003 and 20 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

1. This office action is in response to the Amendment and Remarks filed 20 May 2005, in which claims 11-26 and 28-42 were presented for examination.
2. In view of the newly applied prior art, the Examiner withdraws the previous indication of allowable subject matter concerning claims 12, 13, 19, 21-24, 28 and 35.
3. The Examiner acknowledges the amended drawings filed 20 May 2005 and withdraws the previous objection to the drawings.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 12, 13, 22-24, 28 and 35 is rejected under 35 U.S.C. 102(b) as being anticipate by Kosik et al., US Patent No. 5,993,352.

5. **(Claim 12)** Kosik et al. discloses a method of controlling an automated clutch of a vehicle, comprising the step of adapting a characteristic curve of the clutch through an electronic clutch management system (Abstract), wherein the adaptation is performed under at least one suitable set of operating conditions (Column 2, line 66-Column 3, line 3), said suitable set of operating conditions being represented by at least one suitable operating point (Column 1, lines 46-51), wherein an adaptation algorithm is used for the adaptation of said characteristic curve (Column 3, lines 37-46), and wherein the

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adaptation algorithm performs adaptations of signals and parameters depending on the current operating point of the vehicle (Column 3, lines 37-46 and Column 4, lines 7-31).

6. **(Claim 13)** Kosik et al. further discloses wherein the adaptation algorithm employs at least one corrective term (Column 4, lines 19-31).

7. **(Claim 16)** Kosik et al. further discloses wherein the at least one correction term comprises a correction value for the clutch actuator displacement (Column 4, lines 19-31 and lines 41-46).

8. **(Claim 17)** Kosik et al. further discloses wherein the at least one correction term comprises a characteristic curve parameter which serves to adapt the friction coefficient of the automated clutch (Column 4, lines 15-18).

9. **(Claim 22)** Kosik et al. further discloses wherein the at least one operating point is taken into account in the design of the adaptive algorithm (Column 3, lines 33-46).

(Claim 23) Kosik et al. discloses a method of controlling an automated clutch of a vehicle, comprising the step of adapting a characteristic curve of the clutch through an electronic clutch management system (Abstract), wherein the adaptation is performed under at least one suitable set of operating conditions (Column 2, line 66-Column 3, line 3), said suitable set of operating conditions being represented by at least one suitable operating point (Column 1, lines 46-51); wherein the adaptation of the characteristic curve, a second adaptation is superimposed on a first adaptation (Column 4, lines 7-31, a second adaptation is superimposed on the first calculated adaptation and evaluates the deviation).

10. **(Claim 24)** Kosik et al. further discloses wherein the first adaptation comprises adapting at least the friction coefficient through the steps of: evaluating a dynamic equilibrium of the clutch and thereby determining a deviation between the torques acting on the clutch (Column 3, lines 37-46), and adjusting the friction coefficient in accordance with said deviation (Column 4, lines 7-18).

11. **(Claim 28)** Kosik et al. discloses a method of controlling an automated clutch of a vehicle, comprising the step of adapting a characteristic curve of the clutch through an electronic clutch management system (Abstract), wherein the adaptation is performed under at least one suitable set of operating conditions (Column 2, line 66-Column 3, line 3), said suitable set of operating conditions being represented by at least one suitable operating point (Column 1, lines 46-51); wherein the adaptation of the characteristic curve comprises: during a slip phase oh the clutch, computing a clutch torque based on an engine torque and on a rotary acceleration of the engine (Column 3, lines 37-46), and comparing the computed clutch torque to a stored characteristic curve (Column 4, lines 9-18); and wherein a torque equilibrium at the automated clutch is represented by the equation: $J_{\text{engine}} * d\omega_{\text{engine}}/dt = M_{\text{engine}} - M_{\text{clutch}}$ wherein J_{engine} (J) stands for a moment of inertia of the engine, $d\omega_{\text{engine}}/dt$ ($d\omega/dt$) stands for a rotary acceleration of the engine, M_{engine} (M_M) stands for the engine torque, and M_{clutch} (M_K) stands for the clutch torque (Column 3, lines 37-46).

12. **(Claim 35)** Kosik et al. discloses a method of controlling an automated clutch of a vehicle, comprising the step of adapting a characteristic curve of the clutch through an electronic clutch management system (Abstract), wherein the adaptation is performed

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under at least one suitable set of operating conditions (Column 2, line 66-Column 3, line 3), said suitable set of operating conditions being represented by at least one suitable operating point (Column 1, lines 46-51); wherein the adaptation of the characteristic curve comprises: during a slip phase oh the clutch, computing a clutch torque based on an engine torque and on a rotary acceleration of the engine (Column 3, lines 37-46), and comparing the computed clutch torque to a stored characteristic curve (Column 4, lines 9-18); and wherein an integrating method is used in the adaptation of the characteristic curve (Column 3, lines 37-46).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. **Claim 19** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kosik et al. in view of Adachi et al., US Patent No. 6,132,336.

Kosik et al. discloses the method of controlling an automated clutch as applied to claim 12. Kosik et al. does not disclose the use of a parameter identification to design the adaptation algorithm. However, Adachi et al. teaches the use of parameter identification to control an automatic clutch, specifically the engagement force for target slip rotation speed (Column 1, lines 45-52). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of Kosik et al.

with the teachings of Adachi et al. because as Adachi et al. suggests parameter identification is one control method of computing a transfer function of system characteristics (Column 1, lines 45-52).

Claim Rejections - 35 USC § 103

14. **Claim 21** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kosik et al. in view of Fritz et al., US Patent No. 6,246,945.

Kosik et al. discloses the method of controlling an automated clutch as applied to claim 12. Kosik et al. does not disclose the use of a neuro-fuzzy method to design the adaptation algorithm. However, Fritz et al. teaches the advantages of using a fuzzy method to design a control adaptation algorithm for an automatic transmission (Column 6, lines 26-36). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of Kosik et al. with the teachings of Fritz et al. because as Fritz et al. suggests, fuzzy method the possibility of combining a plurality of items of information through rules in such a way that they yield a clear overall response of the controlled device (Column 10, lines 26-33).

Allowable Subject Matter

Claims 14, 15, 20, 25, 26, 29-34 and 36-42 are objected to as being dependent upon a rejected base claim and are at present considered to overcome the prior art of record if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 11 is at present considered allowable.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine M. Behncke whose telephone number is (571) 272-8103. The examiner can normally be reached on Monday - Friday 8:30 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G. Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

08-02-2005


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